

What is claimed is:

1. A near field probe comprising:
  - an antenna having a first dipole and a second dipole for measuring an electromagnetic field, said antenna producing an electrical signal having an output voltage indicative of a field strength for said electromagnetic field;
  - a first diode having an anode connected to the first dipole of said antenna and a cathode connected to the second dipole of said antenna;
  - a second diode having an anode connected to the second dipole of said antenna and a cathode
  - a first capacitor having a first terminal connected to the cathode of said second diode and a second terminal, wherein said first diode, said second diode and said first capacitor double the output voltage of the electrical signal produced by said antenna;
  - a transmission line transformer having an electrical signal input connected to the cathode of said second diode and the second terminal of said first capacitor, said transmission line transformer isolating said electrical signal from ground providing a signal strength efficiency of

23 approximately ninety eight percent.

1 2. The near field probe of claim 1 wherein said first  
2 diode and said second diode comprise Schottky diodes.

1 3. The near field probe of claim 1 further comprising  
2 a second capacitor having first and second terminals connected  
3 to an electrical signal output for said transmission line  
4 transformer, said second capacitor operating as an alternating  
5 current short circuit when said second capacitor is positioned  
6 at the electrical signal output for said transmission line  
7 transformer.

1 4. The near field probe of claim 3 further comprising a  
2 third capacitor having first and second terminals connected to  
3 the electrical signal output for said transmission line  
4 transformer, said third capacitor integrating said electrical  
5 signal and reducing noise within said electrical signal.

1 5. The near field probe of claim 3 wherein said second  
2 capacitor is a twenty picofarad capacitor.

1 6. The near field probe of claim 4 wherein said third

2 capacitor is a 0.01 microfarad capacitor.

1 7. The near field probe of claim 1 further comprising a  
2 load resistor connected to said transmission line transformer,  
3 said load resistor having an impedance which varies from about  
4 137 ohms to about 3.56 k-ohms.

1 8. The near field probe of claim 1 wherein said first  
2 capacitor is a twenty picofarad capacitor.

1 9. The near field probe of claim 1 wherein said near field  
2 probe provides an output voltage reading of 0.84 volts to 3.17  
3 volts over a frequency range of 2212.5 MHz-2276.5 MHz when the  
4 electromagnetic field generated by an antenna coupler being  
5 tested has a power requirement of 1.7 watts

1 10. The near field probe of claim 1 wherein said near  
2 field probe provides an output voltage reading of 2.15 volts to  
3 5.40 volts over a frequency range of 2212.5 MHz-2276.5 MHz when  
4 the electromagnetic field generated by an antenna coupler being  
5 tested has a power requirement of 4.0 watts.

1 11. A near field probe comprising:

2 a dipole antenna having a first dipole and a second dipole  
3 for measuring an electromagnetic field, said dipole  
4 antenna producing an electrical signal having an  
5 output voltage indicative of a field strength for  
6 said electromagnetic field;

7 a first Schottky diode having an anode connected to the  
8 first dipole of said dipole antenna and a cathode  
9 connected to the second dipole of said dipole  
10 antenna;

11 a second Schottky diode having an anode connected to the  
12 second dipole of said dipole antenna and a cathode;

13 a first capacitor having a first terminal connected to the  
14 cathode of said second Schottky diode and a second  
15 terminal;

16 a transmission line transformer having an electrical  
17 signal input connected to the cathode of said second  
18 Schottky diode and the second terminal of said first  
19 capacitor;

20 said first Schottky diode rectifying one half of said  
21 electrical signal;

22 said second Schottky diode and said first capacitor  
23 rectifying another half of said electrical signal  
24 doubling the output voltage of the electrical signal

25                   produced by said dipole antenna;  
26           said transmission line transformer isolating said  
27           electrical signal from ground providing a signal  
28           strength efficiency of approximately ninety eight  
29           percent; and  
30           a second capacitor having first and second terminals  
31           connected to an electrical signal output for said  
32           transmission line transformer, said second capacitor  
33           operating as an alternating current short circuit  
34           when said second capacitor is positioned at the  
35           electrical signal output for said transmission line  
36           transformer.

1           12. The near field probe of claim 11 further comprising a  
2           third capacitor having first and second terminals connected to  
3           the electrical signal output for said transmission line  
4           transformer, said third capacitor integrating said electrical  
5           signal and reducing noise within said electrical signal.

1           13. The near field probe of claim 11 wherein said second  
2           capacitor is a twenty picofarad capacitor.

1           14. The near field probe of claim 12 wherein said third

2 capacitor is a 0.01 microfarad capacitor.

1 15. The near field probe of claim 11 further comprising a  
2 load resistor connected to said transmission line transformer,  
3 said load resistor having an impedance which varies from about  
4 137 ohms to about 3.56 k-ohms.

1 16. The near field probe of claim 11 wherein said first  
2 capacitor is a twenty picofarad capacitor.

1 17. The near field probe of claim 11 wherein said near  
2 field probe provides an output voltage reading of 0.84 volts to  
3 3.17 volts over a frequency range of 2212.5 MHz-2276.5 MHz when  
4 the electromagnetic field generated by an antenna coupler being  
5 tested has a power requirement of 1.7 watts

1 18. The near field probe of claim 11 wherein said near  
2 field probe provides an output voltage reading of 2.15 volts to  
3 5.40 volts over a frequency range of 2212.5 MHz-2276.5 MHz when  
4 the electromagnetic field generated by an antenna coupler being  
5 tested has a power requirement of 4.0 watts.

1 19. A near field probe comprising:

2 a dipole antenna having a first dipole and a second dipole  
3 for measuring an electromagnetic field, said dipole  
4 antenna producing an electrical signal having an  
5 output voltage indicative of a field strength for  
6 said electromagnetic field;

7 a first Schottky diode having an anode connected to the  
8 first dipole of said dipole antenna and a cathode  
9 connected to the second dipole of said dipole  
10 antenna;

11 a second Schottky diode having an anode connected to the  
12 second dipole of said dipole antenna and a cathode;

13 a first capacitor having a first terminal connected to the  
14 cathode of said second Schottky diode and a second  
15 terminal, wherein said first capacitor is a twenty  
16 picofarad capacitor;

17 a transmission line transformer having an electrical  
18 signal input connected to the cathode of said second  
19 Schottky diode and the second terminal of said first  
20 capacitor;

21 said first Schottky diode rectifying one half of said  
22 electrical signal;

23 said second Schottky diode and said capacitor rectifying  
24 another half of said electrical signal doubling the

25                   output voltage of the electrical signal produced by  
26                   said antenna;  
27           said transmission line transformer isolating said  
28           electrical signal from ground providing a signal  
29           strength efficiency of approximately ninety eight  
30           percent;  
31           a load resistor connected to said transmission line  
32           transformer, said load resistor having an impedance  
33           which varies from about 137 ohms to about 3.56 k-  
34           ohms; and  
35           a second capacitor having first and second terminals  
36           connected to an electrical signal output for said  
37           transmission line transformer, said second capacitor  
38           operating as an alternating current short circuit  
39           when said second capacitor is positioned at the  
40           electrical signal output for said transmission line  
41           transformer, wherein said second capacitor is a  
42           twenty picofarad capacitor.

1           20. The near field probe of claim 19 further comprising a  
2           third capacitor having first and second terminals connected to  
3           the electrical signal output for said transmission line  
4           transformer, said third capacitor integrating said electrical



5        signal and reducing noise within said electrical signal, said  
6        third capacitor being a 0.01 microfarad capacitor.